

25. Switch to zero emissions vehicles

Worldwide, transport is a significant source of emissions. From an Bangladesh energy security perspective, it is also the sector that requires the most fuel imports. Switching to alternative fuels might be desirable.

The last decade

In the last decade a considerable proportion of vehicles in Bangladesh have switched to CNG. This is driven by air quality projects as much as energy security. The first electric vehicles have also started to be seen on the road.

Assumptions of model

ICE refers to Internal combustion engine, and includes both petrol and diesel engines.

Levels

Level 1

Least effort. ICE dominates. No new zero emission vehicles are converted, and over time existing CNG vehicles are replaced. Increases in engine efficiency are very slow.

Level 2

Current trends. CNG dominates. ICE vehicles continue to be converted or replaced. By 2050, diesel freight vehicles are 1.5x more efficient.

Level 3

Push to Zero Emissions. Hybrids and Zero emission vehicles are favored, and expand their market share to about 55% of the Bangladesh passenger vehicle fleet. By 2050, diesel freight vehicles are 2.0x more efficient.

Level 4

Complete Push to Zero Emissions. Zero emission vehicles represent over 90% of the Bangladesh passenger vehicle fleet. Electric freight vehicles start entering the market. By 2050, diesel freight vehicles are 2.4x more efficient.

Interaction with other levers

The 'fuel-cell or battery lever' allows the user to choose the technology mix used by zero emission vehicles. The 'Transport policy' will adjust the relative importance of each type of vehicle. The GDP lever affects the amount of travel required. Since rail is easier to electrify than road freight, the 'move freight off roads' lever will increase the impact of this lever's setting.



Figure 25.1: An experimental electric rickshaw



Figure 25.2: A commercial zero-emissions sports car



Figure 25.3: An overhead electric train